# V. BENEFITS, FINDINGS, AND INSIGHTS

Benefits of patent licensing to DoD, findings on DoD licensing and patent marketing approaches, and general insights on licensing and patent marketing were deduced from information gathered during interviews with inventors and licensees as well as additional information gathered from interviews with ORTAs, partnership intermediaries, and non-DoD licensing entities.

## Benefits of Licensing to DoD

The value to DoD in licensing its inventions can be summarized in three benefits: licensing can result in products that are made commercially available to DoD; licensing can foster new working relationships with private industry; and licensing can generate revenue for the DoD laboratories. These benefits were recurring themes described by participants in the licensing process. Details and descriptive information can be found in the referenced PLA summaries (Appendices A, B, and C). A PLA number was assigned by the study author to each PLA presented in this report for ease in referencing the appendices and should not be used when referring to a specific PLA outside of this report.

- ***Licensing can result in COTS products available for purchase by DoD.***

  As evidenced by the sample of PLAs reviewed for this study, licensing can lead to the further development of DoD technologies resulting in commercial products. In addition to the PLAs that have already demonstrated this achievement, many other licensing efforts are progressing toward the development of a product.

The PLA with the U.S. Army Engineer Research and Development Center (ERDC) and Kessler Soils Engineering resulted in Kessler Soils commercializing the Dual Mass Dynamic Cone Penetrometer soil test device. This device allows for increased soil sample size and faster results. The penetrometer has been sold to the Air Force and Navy for evaluation of pavement in military operations. It was used in Bosnia, Somalia, and Kosovo.

The Temporally-Ordered Routing Algorithm (TORA), invented at the U.S. Naval Research Laboratory, is the enabling technology on which the NovaRoam 9000 wireless router is based. The NovaRoam 9000 is used to connect computers and exchange data in a wireless environment. Nova Engineering, Inc. licensed this technology from the Naval Research Laboratory and has recently sold four of the NovaRoam 9000 to Edwards Air Force Base.

The U.S. Air Force School of Aerospace Medicine (USAFSAM) negotiated an exclusive license with Den-Tal-Ez, Inc. to manufacture the Air Controlled Sterile Irrigation System (ACSIS) apparatus. The ACSIS delivers sterile irrigating solution to dental sites during restorative and surgical procedures. The ACSIS is approved for both general dentistry and dental surgery and now sold to both military and commercial dental practices.

*Other Examples*

| PLA | PLA Title | Remarks |
|---|---|---|
| A3 | Nonexclusive License with Rheinmetall Industries AG. | Produces a stabilizer that is an enabling technology for Cartridge, TP-T, M831A1. |
| A6 | Exclusive License with New England Ropes | The small diameter rope used in the Micro Rappel System is stronger than what was previously used in rappelling soldiers and has commercial uses in rappelling natural and man made obstacles. |
| N2 | Nonexclusive License with Keopsys | A half-dozen products exist that contain side pumped fiber amplifiers including fiber lasers for laboratory use. |
| N4 | Nonexclusive License with Moldex | Products to date that use the vibration damping materials include an ear cup and automotive hoses. |
| N5 | Partially-Exclusive License with Lake Shore Cryotronics, Inc | QMSA software is sold as both a stand alone package and as an option to Lake Shore's Hall Effect/Electronic Transport Measurement Systems. |
| AF1 | Exclusive License with Beam Tech Corporation | The growth medium developed for rapid detection of viable anthrax is awaiting validation from the CDC. |
| AF3 | Exclusive License with SAIC | New lighter, lower cost projectors for conference room use have been produced. |
| AF5 | Nonexclusive License with Sandia National Laboratories | While working toward the next generation "4-junction" solar cell, the price of the "3-junction" solar cell has been reduced from $700 per watt to $365 per watt. |

- ***Licensing can lead to the fostering of new working relationships with private industry resulting in furthering DoD research and development. Sometimes these new working relationships are solidified via the CRADA mechanism.***

  When a company licenses a technology from a DoD laboratory, oftentimes it can be the first time the company has interfaced with the laboratory. In learning the details of the patented technology, these new experiences forge new collaborations furthering research in the respective technical field. Whether resulting collaborations are new or familiar, CRADAs are typically used to formalize the working relationship.

After learning about the CORE-LOC technology through a Commerce Business Daily advertisement, Baird and Associates became interested in licensing this technology from the U.S. Army Engineer Research and Development Center (ERDC). The working relationship began under a CRADA from which they negotiated a license. Each time ERDC works with an

engineering firm to provide a specific design for a particular application of CORE-LOC, knowledge is gained that can be applied to future designs.

In addition to Lake Shore Cryotronics, Inc. licensing the Quantitative Mobility Spectrum Analysis (QMSA) from the U.S. Naval Research Laboratory, they also negotiated a CRADA to further develop the technology for specific Lake Shore applications. Under the CRADA, improvements to the technology were made that furthered its usefulness as a commercial product. The work accomplished under the CRADA led to another patent which allows a broader range of materials to be successfully characterized.

After negotiating an exclusive license with the U.S. Air Force Research Laboratory, Human Systems Effectiveness Directorate, Beam Tech Corporation entered into a CRADA to further the development of the "3AT" growth medium for rapid detection of viable anthrax. Beam Tech's intention was to take the licensed technologies consisting of the synthesis and production of a growth medium for the rapid detection of E.coli, and apply them to the rapid identification of viable anthrax. Beam Tech is awaiting notification from the Centers for Disease Control (CDC) for validation of the growth medium for use in identifying viable anthrax.

*Other Examples*

| PLA | PLA Title | Remarks |
|---|---|---|
| A1 | Nonexclusive License with Kessler Soils Engineering | The ability to work with the inventor was very attractive. A CRADA has been established to continue work in this area. |
| N1 | Nonexclusive License with Nova Engineering, Inc. | Scientists worked with Nova to successfully transfer the TORA technology. |
| N3 | Nonexclusive License with Microphase Corporation | A CRADA is being negotiated where Microphase is providing "funds-in" to work toward extending the components and devices that utilize the WDM technology. |
| N4 | Nonexclusive License with Moldex | CRADA is being used to collaborate on technology development to include making large sheets of vibration damping material. |
| AF5 | Nonexclusive License with Sandia National Laboratories | Lockheed Martin/EMCORE licensed the "4-junction" solar cell technology after working under a CRADA arrangement with Sandia |

- ***Licensing generates royalties and up-front licensing fees resulting in revenue back to the DoD laboratories.***

  DoD Instruction 5535.8: Department of Defense Technology Transfer Program, outlines guidelines for the distribution of royalties and other payments received by the DoD components. Under these guidelines, the inventor and co-inventor are entitled to at least $2000 plus equal shares of at least 20 percent of the remainder

of the royalties or other payments. If the royalties or other payments are less than or equal to $2000 for each of the inventors, the entire amount is paid to the inventor. For co-inventors, the amount is equally divided among the co-inventors. The remaining 80 percent may then be used for such things as: payment of expenses associated with licensing; increasing licensing activity at the respective DoD component; research and development consistent with the laboratory mission; awards to technical employees for scientific research or engineering; promotion of scientific exchange among other activities in the laboratory; or for education and training consistent with the laboratory mission.

In all candidate PLAs reviewed in this study, royalty revenue was realized. This royalty revenue for licensing patented technology is in the form of up-front licensing fees, royalty schedules on products sold, and/or flat fees. However, due to the sensitive nature of reporting negotiated licensing fees and royalty schedules, royalty revenue is presented in the summaries in the appendices only when provided by the licensee. Negotiations for royalty payments take into consideration a number of factors. For example, when the licensee is a small business that may be experiencing cash flow problems, perhaps a low up-front licensing fee with higher product royalties is preferable so that commercialization can be realized. In addition, up-front licensing fees and royalty schedules can depend on the technology field and whether the resulting commercial product is a low production item or one that will be mass produced. If a patent is nearing expiration, a flat fee with no royalties may be appropriate.

Information gathered in the interviews involved in this study showed that with respect to royalty revenue, after 20 percent of the revenues is distributed to the inventor or co-inventors, the remaining 80 percent is used to further research in the inventor's respective technology field or used to enhance technology transfer activities at the inventor's laboratory**.** What is done with this royalty revenue is essentially at the discretion of the laboratory directors. The U.S. Naval Research Laboratory uses its royalty revenue to support their Office of Technology Transfer. Until recently, technology transfer activities at the U.S. Air Force Research Laboratory, Munitions Directorate, were supported by royalty revenue resulting from just one license.

## Findings on DoD Licensing and Patent Marketing Approaches

Three general findings on DoD licensing and patent marketing approaches emerged from discussions with the inventors, licensees and ORTAs and are linked to specific PLAs reviewed in this study (Appendices A, B, C). These findings include: the inventor is the best resource for marketing patents; technologies licensed from DoD are typically immature and require additional resources to bring them to commercialization; and start-up companies are sometimes established to license DoD technologies and bring them to commercialization.

- ***The inventor is the best resource for marketing DoD patented technologies.***

  An Association of University Technology Managers study[46] reported that inventors are the major source of licensing leads at research institutions. This was also found to be the case with DoD laboratories. DoD scientists and engineers have long standing relationships with their commercial counterparts through contracted research and have developed extensive networks through technical conferences. The inventor is typically contacted first and queried on his or her

invention which oftentimes leads to a visit by the interested party. The inventor, in turn, supplies the respective technology transfer licensing office with contact information on potential licensees.

When Pharmacia & Upjohn Company was notified that the U.S. Army Soldier Biological Chemical Command had a patent for the use of Emery 3004 as a replacement for Di(2-ethylhexyl) phthalate in certifying particulate filters, they contacted the inventor. After the initial courting of the potential licensee, the inventors provided the contact information to their local technology transfer professionals.

A technical professional working with Microphase Corporation and the U.S. Space and Naval Warfare Systems Center (SPAWAR) connected a Microphase employee with the inventor of the Fused Optic Wavelength Divider Multiplicity technology at SPAWAR. Microphase first visited SPAWAR to observe a demonstration of the technology. Following the visit, Microphase prepared a business plan and filed an application for a nonexclusive license.

Advanced Micro Devices learned of the U.S. Air Force Research Laboratory, Materials and Manufacturing Directorate's cell timing tester methodology through a consortium of chip makers that included Sandia National Laboratory and Advanced Micro Devices. Researchers at the Air Force Research Laboratory chanced across members of this consortium at a research conference leading to commencing discussions with Sandia. Sandia, in turn, provided the segue that led to interest in the technology by Advanced Micro Devices. Advanced Micro Devices licensed the technology for a period of one year to evaluate and further develop the technology internally.

*Other Examples*

| **PLA** | **PLA Title** | **Remarks** |
|---|---|---|
| A1 | Nonexclusive License with Kessler Soils Engineering | Kessler Soils learned of the technology while visiting the laboratory for other reasons. The inventor provided contact information to the local ORTA. |
| N1 | Nonexclusive License with Nova Engineering, Inc. | Inventor was working with UMD who had a prior working relationship with Nova Engineering. |
| AF3 | Nonexclusive License with SAIC | SAIC co-invented the technology while working under an onsite contract. |
| AF5 | Nonexclusive License with Sandia National Laboratories | News about the patented "4-junction" solar cell technology spread at conferences and through networking. |

- ***Technologies licensed from DoD are relatively immature and typically require additional resources and time to bring them to commercialization.***

  As is often the case, technologies emerging from DoD laboratories, as well as those from academia, are in the early stages of development and can require a large investment to bring the inventions to the next level of maturity. The technologies are typically embryonic in nature without having demonstrated proof of concept or having developed a prototype. Therefore, licensees must be in a position where they can invest the time and resources necessary to bring the technology to commercialization. Large companies have the resources, but often do not have the commitment to commercialize if the technology is determined to be outside their core competency areas. Small companies need to secure the investment dollars necessary via outside private investors, venture capital firms, or grants and contracts. However, small companies do benefit significantly from licensing technologies from DoD laboratories in that they gain access to technologies, even at immature stages, for which they would not have otherwise been able to fund the development. The U.S. Naval Research Laboratory has been successful in targeting companies with annual sales of $10 to $20 million who have the resources necessary to commercialize a new technology. The University of Virginia Patent Foundation prefers mid-sized companies, for they have the money to invest in maturing the technology and are not so big that they lose focus.

Paratek Microwave, Inc. exclusively licensed a suite of patents from the U.S. Army Research Laboratory for technology that includes tunable filters and scanning antennas. Paratek benefited from licensing this technology, for they would not have been able to invest the funds necessary to develop the technology to its patented maturity level. Company funds are being invested to further develop the technology to bring it to commercialization, thereby generating revenue for the company.

In licensing a processing methodology for producing damping materials from the U.S. Naval Aerospace Medical Research Laboratory, Moldex was interested in optimizing the material for the automotive industry. Through a CRADA, Moldex and the inventor are collaborating on further technology development. Moldex stands to profit from unlimited market potential for the production of larger sheets of material.

Licensing of the Air Force Research Laboratory and Sandia National Laboratories jointly patented "4-junction" solar cell technology by Lockheed Martin/EMCORE and Spectrolab has stimulated research in solar cell technology. These two licensees are working to reduce the "4-junction" solar cell technology to practice. Currently, a "3-junction" solar cell has been produced which will be used in five Air Force satellite programs.

*Other Examples*

| PLA | PLA Title | Remarks |
|---|---|---|
| A1 | Nonexclusive License with Kessler Soils Engineering | New, automated products have resulted from building on the licensed patent. |
| A6 | Exclusive License with New England Ropes | Items were further developed to Army specifications. |
| N1 | Nonexclusive License with Nova Engineering, Inc. | TORA technology was incorporated into the NovaRoam 9000. |
| N2 | Nonexclusive License with Keopsys | Company hired Navy employee to further develop the technology. |
| N3 | Nonexclusive License with Microphase Corporation | Technology was in prototype stage. Production engineering and qualification testing was provided by the licensee. |
| N5 | Partially Exclusive License with Lake Shore Cryotronics, Inc. | Work was continued under a CRADA resulting in a follow-on patent. |
| AF1 | Exclusive License with Beam Tech Corporation | Applied growth medium used for the rapid detection of E.coli to the rapid identification of viable anthrax. |
| AF2 | Nonexclusive License with Advanced Micro Devices, Inc. | Licensed technology as background technology so that they could further develop the technology internally. |
| AF3 | Exclusive License with SAIC | SAIC exclusively licensed the technology to DigiLens, Inc. SAIC has an equity position in DigiLens for the further development of the technology. |

- ***Start-up companies are sometimes established to license DoD technologies and bring them to commercialization.***

  The AUTM study indicates that one of the most important factors contributing to successful technology transfer is the effort on behalf of entrepreneurs. Individuals, either the inventors themselves or investors, who take the initiative to organize a business around a technology are the single most important factor for technologies successfully licensed to start-up firms. In fact, almost half of the licensed technologies in the AUTM sample would have most likely remained unlicensed had a start-up company not licensed them.[47] Start-up companies typically have the focus and hunger it takes to bring a technology to commercialization.

After working eight years for the U.S. Army Research Laboratory, an inventor and three other team members left ARL to create a new company, raise venture capital, and exclusively license the new materials technology they developed for the Army. Paratek Microwave, Inc. was established to develop, manufacture, and commercialize electronically tunable RF components and electrically scanning antennas for the wireless telecommunications industry.

An individual who had previously licensed a technology from the U.S. Naval Research Laboratory became aware of another technology for side pumping fiber amplifiers using low cost and high power laser diode arrays. This individual left the company where he was working and started a new company, Keopsys, based on this side pumping technology. In this particular case, the inventor has left NRL to work at the newly established company and bring the technology to commercialization. Currently, this technology has been incorporated into about a half-dozen products.

Beam Tech Corporation was established in conjunction with inventors at the U.S. Air Force Research Laboratory, Human Systems Effectiveness Directorate, to further develop and commercialize a series of patented technologies centered around anthrax identification. The inventors worked with a local university technology transfer representative and the city of San Antonio's technology incubator to establish the company. Two partners have invested their own money into the company. Their interest in Beam Tech stemmed, in part, from personal contact with the scientists in the Air Force laboratory whose credibility and excitement was a key selling point. Air Force employees involved in the establishment of the new company fully disclosed their involvement and have removed themselves from all situations that may have the appearance of a conflict of interest.

Science Applications International Corporation (SAIC) exclusively licensed technology for polymer liquid crystals used in producing holograms from the U.S. Air Force Research Laboratory, Materials and Manufacturing Directorate. SAIC has since exclusively licensed the technology to DigiLens Inc., a start-up company that is working toward applications in the display arena. DigiLens is currently applying this technology to develop lighter, lower cost projectors. Future develop of the technology includes directly projecting images onto the retina.

## General Insights on Licensing and Patent Marketing

In addition to the benefits of licensing technologies from DoD and findings related to how DoD markets their patented technologies, a number of insights were gleaned from discussions with inventors, licensees, ORTAs, licensing professionals at non-DoD entities, as well as DoD laboratory technology transfer business plans. These insights are highlighted below.

- ***There is a mix of opinions regarding the benefits of having patent attorneys located onsite at DoD and non-DoD research institutions.***

Technology transfer offices at some academic institutions as well as some DoD laboratories believe that an experienced staff can handle the processing of most licensing negotiations and paperwork necessary and only have the need to use attorneys when changes to clauses outside that which is considered standard arise. However, some technology transfer professionals believe that having attorneys readily available to inventors can streamline the patenting as well as the licensing processes. The University of Virginia Patent Foundation has its own patenting department. They believe it is less expensive to have in-house attorneys; they are more available to the inventors and are not distracted by other clients. The Patent Foundation tracks hours spent against the various patent efforts and these hours are then charged to the licensee. The U.S. Air Force Research Laboratory, Space Vehicles Directorate, has experienced an increase in patenting activity since they have acquired an onsite attorney. Inventors, in general, have indicated that

they would prefer to have an onsite attorney, for oftentimes licensing negotiations can involve a series of iterations that could be accomplished in a more timely manner if the attorney was co-located with the laboratory.

- ***Established practices for patent prioritization and invention evaluation are ad hoc in the DoD laboratories.***

Some DoD laboratories have not needed a process for patent prioritization or invention evaluation until recently, for their patenting activity had been low. However, now that laboratories are merging into larger organizations, the need for established practices for patent prioritization and invention evaluation is growing. Due to limited budgets, patent prioritization is important because there are three maintenance fees associated with a U.S. patent during its lifetime. In most cases, DoD laboratories pay the patenting fees as well as the first maintenance fee. However, in some cases, the first maintenance fee is paid only when a potential licensee has been identified. If the technology is for military use only, then the first maintenance fee is typically not paid. The second maintenance fee is usually paid only when there is a licensee or a license is in the process of being negotiated. However, many of the DoD laboratories make their decisions regarding the payment of maintenance fees on a case-by-case basis.

Having a committed licensee before moving forward with the patenting process appears to be the norm in academic environments. At MIT, 70 percent of their invention disclosures have an interested licensee before the invention is patented. The University of Virginia Patent Foundation works toward having a licensee before the invention is patented, although they do take a minimal risk and allow a small percentage (1/30) of the inventions to be patented without a secured licensee.

- ***Both DoD laboratories and academic research institutions have had limited success with finding licensing partners via technology exchanges.***

No one interviewed for this study, including both DoD and non-DoD entities, has had any success to date in deriving a licensee from the use of technology exchanges. There is a general feeling in the community that if these exchange sites offer to post technologies free of charge and postings do not require custom formatting of information, then it is worth posting them for it is essentially free advertising.

- ***Using brokers as middlemen to match technologies with potential licensees is being considered by some DoD laboratories and academic research institutions.***

The U.S. Naval Surface Warfare Center, Carderock, has used brokers for very specific technologies. The University of Virginia Patent Foundation has an agreement in place with a local technology broker, where the broker has been given some of the more difficult to sell technologies, but there have been no licenses arranged to date.

- ***Technology transfer alliances are becoming a valuable resource for marketing DoD patents.***

Technology transfer alliances are local partnerships that can consist of Federal laboratories, state universities, and regional economic development entities that handle regional technology transfer. The U.S. Air Force Research Laboratory, Munitions Directorate, primarily uses the

Gulf Coast Alliance for Technology Transfer (GCATT), an alliance in Northeast Florida and Southern Alabama, as their primary resource for marketing their patents. They are currently funding GCATT to review their patent portfolio and select one or two patents to aggressively market. GCATT was instrumental in connecting Moldex with the Navy Aerospace Medical Research Laboratory resulting in a license agreement for their patented process for developing vibration damping materials. The U.S. Army Soldier Systems Center has used the Massachusetts Manufacturing Extension Partnership (MEP), an alliance of more than 70 not-for-profit centers located throughout the United States and linked together through the Department of Commerce's National Institute of Standards and Technology (NIST) MEP Program. These centers provide small and medium-sized businesses with help in many areas related to manufacturing, including technology transfer. Although no licenses have resulted, one CRADA has been negotiated by this alliance.

- ***Performing technology market assessments is not widely practiced.***

Although DoD Instruction 5535.8 deems technology assessment an important part of developing a marketable portfolio of technologies, the approach is not widely practiced in the DoD laboratories or in academic research institutions. The U.S. Air Force Research Laboratory, Information Directorate, is contracting with the New York State Technology Enterprise Corporation (NYSTEC), a partnership intermediary, to perform two technology evaluations per year. If NYSTEC brings a licensee to the table they can share in the royalties; however, to date there have been no successes to report. The Wright Technology Network (WTN), a partnership intermediary for the five Air Force Research Laboratory directorates located at Wright Patterson Air Force Base, has also performed market assessments on Air Force technologies. The U.S. Naval Surface Warfare Center (NSWC), Carderock, has outsourced some market assessments to Foresight Technologies on single as well as on groups of patents. A license is currently being negotiated for one of the technologies involved in one of these market assessments. The U.S. Army Engineer Research and Development Center (ERDC) outsourced the evaluation of some patents to the WalMart Innovation Network as a means of gaining insight into decision criteria used in assessments. Although the evaluation was inexpensive, $175.00, ERDC does not anticipate continuing to outsource this function. Using business schools to perform marketing assessments is another avenue being used by some DoD laboratories. NSWC, Carderock, participates in a program with the University of Baltimore and the University of Maryland business schools where students look at either a single patent or a group of patents on a particular technology and perform market assessments. The students contact potential licensees and perform market surveys. The quality of the assessments vary. If the students produce a good quality report, then NSWC gives the school a payment of $2000.

- ***Listing technologies available for licensing on laboratory web sites is a passive approach to marketing technologies.***

Most DoD laboratories post technologies available for licensing on their web sites; however, they typically do not track hits to these sites to see whether there is value in these postings. The U.S. Army Soldier System Center has a more active approach where they have provided an inquiry link on their available technologies web site so that interested parties can query the laboratory on a technology of particular interest. MIT does not list their technologies, except for a chosen few, on their web site. It is MIT's position that a potential licensee needs to have a dialogue with the Technology Licensing Office, for oftentimes what an interested party thinks they want and what they really need differ, leading to matches with alternative technologies.

- ***It is not widely known that Montana State University TechLink has had an appropriations budget line, so there is no cost to the DoD labs for using this PI.***

Many DoD laboratories are not aware that the services of the MSU TechLink are available to them at no cost. The MSU TechLink is a DoD partnership intermediary that offers a range of services that include technology assessments, technology scouting, partnering and licensing assistance, and commercialization support.

- ***When DoD negotiates a license for the manufacture of a product, it does not always lead to production for broader use.***

In the license agreement between the U.S. Army Soldier System Center and New England Ropes, even though the Micro Rappel System was produced to Army specifications, the military user decided not to adopt it. This can have a financial impact of the licensee, for if the item is not suitable for commercial use, significant investments made to manufacture the items to military specifications can be burdensome.

- ***Some inventors perceive that large companies, who have the resources, have the ability to license technologies from DoD for competitive reasons.***

Inventors are concerned that large companies can essentially tie up a competitive technology without ever having the intention of commercializing it. Two pieces of legislation exist that make this type of activity difficult. The provision for "march-in" authority in the Bayh-Dole Act is to prevent the underutilization of federally funded inventions. In addition, the Technology Transfer Commercialization Act of 2000 requires the licensee to make a commitment to achieve practical utilization of the invention within a reasonable time and requires periodic reporting of the use of the invention.

- ***Some inventors are concerned that the Department of Justice (DoJ) is getting a reputation for not prosecuting DoD patent infringement cases; therefore, industry may believe it is unnecessary to license DoD technologies.***

Given that there has been only one reported decision by DoJ regarding infringement of a DoD patent, there is concern that they are not enforcing DoD patents. However, DoJ will prosecute infringement cases when cases warrant such action. Facts in the case must be solid for they will not pursue frivolous cases. It has been found more often than not that inventors believe their invention to be broader than it is, and therefore, the facts do not substantiate the need for prosecution.

Oftentimes, when alerted to a possible patent infringement, DoJ prepares and sends a letter to the parties alerting them that they may be infringing on a DoD patent and asking them if they want to pursue licensing the particular technology. These letters often result in a license. Exclusive licensees can prosecute infringement cases themselves. However, if a nonexclusive licensee prosecutes an infringement, all nonexclusive licensees benefit from successful prosecution.

- ***DoD medical R&D laboratories may benefit from leveraging the services provided by the NIH Office of Technology Transfer.***

Johns Hopkins University School of Medicine as well as Harvard Medical School have offices of technology transfer that are distinct from those of their respective universities. In addition to a separate technology transfer office for their medical school, Johns Hopkins University also has a separate office for their Applied Physics Laboratory. These universities are quite diverse in their scientific R&D. Distinct technology transfer offices provide focus in specific technology areas. These medical school models suggest that the licensing of medical technologies involves a specific client base and processes (i.e. FDA regulatory considerations) that are unique. Although the Army Medical Research & Materiel Command and the Naval Medical Research Institute have consolidated the licensing activities of their medical laboratories at the command level, staffing and resources are limited. Therefore, DoD medical R&D laboratories should consider either further consolidating their licensing resources and activities or leveraging, at the command or local level, an established entity such as NIH where the nuances associated with licensing medical technologies can be addressed in an effective manner. NIH has been very successful and has an experienced staff and established contacts that could be leveraged by DoD. It would not be prudent to reinvent the NIH model at the individual medical laboratories, for the ORTAs at these laboratories do not have the resources required to develop such a capability at each location.